THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TERRENCE L. HARTMAN and
CHARLES A. CODY

Appeal No. 1996-1735
Application No. 08/184,526[1]

HEARD: October 18, 1999

Before GARRIS, PAK, and LIEBERMAN, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 1 through 15 which are all of the claims in the application.

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[1] Application for patent filed January 21, 1994.

The subject matter on appeal is directed to a latent activatable composite and a composition formed from the same. According to appellants, "claims [1-15] do not stand or fall together." See Brief, page 3. However, appellants have not supplied any substantive arguments for the separate patentability of claims 1, 2 and 5 through 15 in accordance with 37 CFR § 1.192(c)(7)(1995). See Brief, pages 8-11. Therefore, for purposes of this appeal, we will limit our discussion to claims 1, 3 and 4, which are reproduced below:

1. A latent activatable composite comprising a base system chosen from the group consisting of epoxies, polysulfides and cyanoacrylates and one or more amine-terminated polyamide curatives dispersed in the base system wherein said composite cures upon activation to form a composition by the reaction of the base system and the polyamide curative or curatives, wherein the ratio of amine group equivalents to acid group equivalents comprising the polyamide curative or curatives is from about 1.05 : 1.00 to about 1.95 : 1.00 equivalents NH_x:COOH wherein x is 1 or 2.

3. The latent activatable composite of claim 2 wherein at least one polyamine is selected from 2-methylpentamethylene diamine, hexamethylene diamine, diethylene triamine, piperazine and mixtures thereof and wherein at least one polycarboxylic acid is selected from sebacic acid, azelaic acid, dodecanedioic acid, dimer acid, trimer acid and mixtures thereof.

4. The latent activatable composite of claim 1 wherein the ratio of amine group equivalents to acid group equivalents is from about 1.20:1.00 to about 1.80:1.00 equivalents NH_x:COOH wherein x is 1 or 2.

The prior art of record relied upon by the examiner are:

Garnish et al. (Garnish) 4,126,505 Nov. 21, 1978

Weiss et al. (Weiss)[2] 32 46267 A1 Jun. 30, 1983 (Published German Patent Application)

The appealed claims stand rejected as follows:

(1) Claims 1 through 3 and 10 through 15 under 35 U.S.C. § 102(b) as anticipated by the disclosure of Weiss;

(2) Claims 4 through 9 under 35 U.S.C. § 103 as unpatentable over the disclosure of Weiss; and

[2] Our reference to Weiss is to its corresponding English translation of record.

(3) Claims 3 through 9 under 35 U.S.C. § 103 as unpatentable over the disclosure of Garnish[3].

We have carefully reviewed the specification, claims and applied prior art, including all of the arguments advanced by both the examiner and appellants in support of their respective positions. This review leads us to conclude that only the examiner's § 102 rejection of claims 1, 2 and 10 through 14 and the examiner's § 103 rejection of claims 4 through 9 over Weiss are well founded. Our reasons for this determination follow.

We turn first to the rejection of claims 1 through 3 under 35 U.S.C. 102(b) as anticipated by the disclosure of Weiss. An anticipation under Section 102 is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of a claimed invention. ***See In re Spada***, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990); ***RCA Corp. v. Applied***

[3] The examiner has not extended this rejection to claim 1, which is the parent claim of claims 3 through 9, and claim 2, which is the parent claim of claim 3. It is not clear to us why the examiner has not extended this rejection to claims 1 and 2 since the rejection of claims 3 through 9 necessarily requires the rejection of claims 1 and 2.

Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). The law of anticipation, however, does not require that the reference teaches what appellants are claiming, but only that the claims on appeal "read on" something disclosed in the reference. ***See Kalman v. Kimberly-Clark Corp.***, 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983).

We find, as found by the examiner at pages 3 and 5 of the Answer[4], that the Weiss reference discloses a latent activatable composite comprising an epoxy resin and an amine-terminated polyamide curing agent. See, e.g., Weiss, pages 1 and 2. Appellants also acknowledged that the Weiss reference discloses that the ratio of amine group equivalents to acid group equivalents comprising the polyamide curative is 2.00:1.00. See Brief, page 9, and the Mardis declaration executed on June 30, 1995, page 4, together with Weiss, page 8, examples 3-5. Appellants, however, argue that such a ratio

[4] The examiner has not properly numbered the pages of the Answer. Specifically, one of the pages in the Answer has not been numbered. Thus, we have renumbered them accordingly. The unnumbered page will be page 3, and pages 3, 4 and 5 will be renumbered as pages 4, 5 and 6, respectively.

is outside of the claimed ratio of “from about 1.05:1.00 to about 1.95:1.00" (emphasis supplied). At issue is, therefore, whether the phrase “about 1.95:1.00" recited in claim 1, by virtue of the imprecise term “about”, is interpreted as encompassing the ratio of 2.00:1.00 exemplified in the Weiss reference.

During prosecution of a patent application, the broadest reasonable interpretation is given to words in the claims in light of the specification as it would be interpreted by one of ordinary skill in this art. ***In re Morris***, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); ***In re Prater***, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969). This approach does not impair appellants' interest since they have ample opportunities to amend their claims to obtain appropriate coverage for their invention with express claim language during prosecution of their application. ***In re Yamamoto***, 740 F.2d 1569, 1571, 222 USPQ 934, 936 (Fed. Cir. 1984). In fact, it “serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified.” ***Id***.

Applying the above rule of interpretation to the present situation, we determine that the phrase “about 1.95:1.00" recited in claim 1 embraces the ratio of 2.00:1.00 exemplified in the Weiss reference. ***In re Peppas***, 214 F.2d 172, 176, 102 USPQ 298, 301 (CCPA 1954); ***In re De Vaney***, 185 F.2d 679, 683, 88 USPQ 97, 101 (CCPA 1954); ***In re Ayers***, 154 F.2d 182, 185, 69 USPQ 109, 112 (CCPA 1946). This interpretation is supported by the specification, pages 17 and 18, which states in relevant part:

> The ratio of equivalents of amine to acid groups (i.e., NH_x COOH groups (where x is 1 or 2)) for the amino-polyamide synthesis to produce the improved curative of the described invention is particularly critical in obtaining the beneficial effects in epoxy, polysulfide and cyanoacrylate systems of the curing composition of our invention. The ratio must be from about 1.05:1.00 equivalents NH_x:COOH to no greater than about 1.95:1.00 equivalents NH_x:COOH. A ratio of about 1.20:1.00 to about 1.80:1.00 is preferred. Care must be taken to assure that the product obtained meets these specifications as higher ratios are particularly to be avoided. Ratios higher than 1.95:1 are generally avoided since they result in products of a lower molecular weight. The mobility of a chemical moiety to successfully diffuse into another body is proportional to the square root of the chemical's weight, all other factors being equal. Therefore, low molecular weight products are much more mobile in the base leading to

> inferior stability and diminished shelf life. Any ratio **greater** than 2.00:1 also will result in free unreacted amine moieties, which are particularly unwanted in a latent epoxy composite as they are immediately reactive with the base used. (Emphasis Added).

At the hearing dated October 18, 1999, appellants have also acknowledged that the imprecise term “about” is used in front of “1.95:1.00" to include a ratio little higher than “1.95:1.00", which, according to page 18 of the specification, can be “2.00:1.00 or lower”.

In light of the foregoing, we agree with the examiner that the Weiss reference fully describes the subject matter of claims 1, 2 and 10 through 15 within the meaning of 35 U.S.C. § 102(b). Hence, we affirm the examiner’s decision rejecting claims 1, 2 and 10 through 15 under 35 U.S.C. § 102(b).

However, claim 3 is on a different footing. As indicated by appellants at pages 10-11 of the Brief, the Weiss reference does not describe an amine-terminated polyamide curative formed of the specific polyamine and polycarboxylic acid recited in claim 3. The examiner has not referred to anywhere in the Weiss reference, which describes a polyamide curative formed of the claimed polyamine and polycarboxylic acid.

Accordingly, we reverse the examiner's decision rejecting claim 3 under 35 U.S.C. § 102(b).

We turn next to the examiner's rejection of claims 4 through 9 under 35 U.S.C. § 103 as unpatentable over the disclosure of the Weiss reference. Appellants do not argue that the limitations recited in claims 5 through 9 impart patentability over the Weiss reference. What appellants argue is that the Weiss reference would not have rendered a polyamide curative having "the ratio of amine group equivalents to acid group equivalents...from about 1.20:1.00 to about 1.80:1.00" recited in claim 4 obvious to one of ordinary skill in the art. However, as indicated ***supra***, we find that the Weiss reference describes a polyamide curative having the amine group equivalents to acid group equivalents ratio of 2.00:1.00, which is very close to the claimed ratio of "about 1.80:1.00". We further find that the polyamide curative described in the Weiss reference can be produced by a condensation reaction between imide or anhydride with an excess amine, "namely little above the stoichiometrically calculated quantity up to a very substantial excess, i.e. up to a 100 molar percent excess." See Answer, page 3, together

with Weiss, page 4. We can deduced from this finding that the Weiss reference describes a polyamide curative having a range of amine group equivalents to acid group equivalents ratios, which embraces the range of ratios recited in claim 4. In view of the above findings of fact, we determine that the Weiss reference would have rendered the claimed subject matter ***prima facie*** obvious to one of ordinary skill in the art. ***See Titanium Metals Corp. v. Banner***, 778 F.2d 775, 782, 227 USPQ 773, 779 (Fed. Cir. 1985)(When both the claimed and prior art products have the same ingredients in proportions which are close to one another, one of ordinary skill in the art would have reasonably expected them to have the same or similar properties); ***In re Malagari***, 499 F.2d 1297, 1303,182 USPQ 549,549(CCPA 1974)(When the claimed and prior art products have overlapping proportions of the same ingredients, such products would be ***prima facie*** obvious over one another).

To rebut the ***prima facie*** case of obviousness established by the examiner, appellants appear to rely on the criticality of the claimed range of ratios. See Brief, page Appellants must “show the [claimed] range is critical, generally by

showing that the claimed range achieves unexpected results relative to the prior art range." ***In re Woodruff***, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). However, appellants' alleged unexpected results are based on conclusory statements at pages 17 and 18 of the specification. See Brief, pages 7 and 9. Mere arguments in the Brief or conclusory statements in the specification do not suffice. ***In re De Blauwe***, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984); ***In re Wood***, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978); ***In re Lindner***, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972). It is by now well settled that unexpected results must be established by factual evidence. Moreover, we note that appellants have not explained just how or why the evidence in the specification substantiates their bare assertion of criticality. ***In re Mayne***, 104 F.3d 1339, 1344, 41 USPQ2d 1451, 1456 (Fed. Cir. 1997) (the burden is on appellants to show why the evidence they relied on is unexpected). Nor have appellants supplied any comparison with the closest prior art, ***In re Buerckel***, 592 F.2d 1175, 1179, 201 USPQ 67, 71 (CCPA 1979), or any showing commensurate in

scope with the claimed subject matter, ***In re Boesch***, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

Determining patentability on the totality of record, after due consideration of appellants' arguments and evidence, we determine that the preponderance of evidence weighs in favor of obviousness within the meaning of 35 U.S.C. § 103. Accordingly, we affirm the examiner's decision rejecting claims 4 through 9 under 35 U.S.C. § 103 as unpatentable over the Weiss reference.

We turn next to the examiner's rejection of claims 3 through 9 under 35 U.S.C. § 103 as unpatentable over the disclosure of Garnish. We find that Garnish teaches using an adhesive having an epoxide resin, a polymercaptan, a polyene and a curing agent for the epoxide resin. See column 1, lines 43-50. This mixture, according to Garnish, is used as a latent activatable composite (one pack system) only when a tertiary amine is used as a curing agent. See column 9, lines 54-68. When an amine terminated polyamide is used as a curing agent, Garnish does not teach, nor would have suggested, using the adhesive mixture as a latent activatable composite (one pack system). ***Id.***

The examiner takes the position that "it would have been obvious to one having ordinary skill in the art to eliminate the polymercaptan and polyene as well as their function" so that the amine terminated polyamide and the epoxide resin can be used as a latent activatable composite. See Answer, page 5. The examiner however, has not explained why one having ordinary skill in the art would have removed essential ingredients of the adhesive described in Garnish. Nor has the examiner identify the functions being eliminated by the removal of these essential ingredients.

In view of the foregoing, we reverse the examiner's decision rejecting claims 3 through 9 under 35 U.S.C. § 103 as unpatentable over the disclosure of Garnish.

As a final point, we note that the Weiss reference at page 2 refers to U.S. Patent Nos. 3,261,882, 3,448,742 and 3,636,657, which are said to describe a composite comprising an epoxide resin and a curing agent selected from amines, amine derivatives and substituted amines. Upon return of this application, the examiner should review the contents of the above-mentioned patents to determine whether they affect the

patentability of the claimed subject matter, especially the subject matter of claim 3.

In summary:

(1) The examiner's § 102 rejection of claims 1, 2 and 10 through 15 is sustained;

(2) The examiner's § 102 rejection of claim 3 is not sustained;

(3) The examiner's § 103 rejection of claims 4 through 9 over the Weiss reference is sustained;

(4) The examiner's § 103 rejection of claims 3 through 9 over the Garnish reference is not sustained; and

(5) The examiner is advised to review the contents of U.S. Patent Nos. 3,261,882, 3,448,742 and 3,636,657 to determine their effect on the patentability of the claimed subject matter.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

BRADLEY R. GARRIS Administrative Patent Judge	)
CHUNG K. PAK Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
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Appeal No. 96-1735
Application No. 08/184,526

APJ PAK

APJ LIEBERMAN

APJ GARRIS

DECISION: AFFIRMED-IN-PART
Send Reference(s): Yes No
or Translation (s)
Panel Change: Yes No
Index Sheet-2901 Rejection(s):

Prepared: October 11, 2000

Draft Final

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OB/HD GAU

PALM /ACTS 2/BOOK
DISK(FOIA)/REPORT